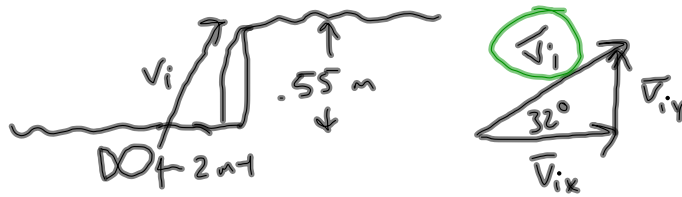


HW 6 p. 101 #4: [6.2 m/s]



* assume that $v_{fy} = 0$ m/s when salmon just clears waterfall.

$$v_{fy}^2 = v_{iy}^2 + 2a_y \Delta y$$

$$\begin{aligned} v_{iy} &= \sqrt{-2a_y \Delta y} \\ &= \sqrt{-2(-9.8 \text{ m/s}^2)(.55 \text{ m})} \\ &= 3.28 \text{ m/s} \end{aligned}$$

back to initial velocity triangle...



$$\sin(32^\circ) = \frac{v_{iy}}{v_i}$$

$$\begin{aligned} v_i &= \frac{v_{iy}}{\sin(32^\circ)} \\ &= \frac{3.28 \text{ m/s}}{\sin(32^\circ)} \\ &= 6.2 \text{ m/s} \end{aligned}$$